

Curriculum Vitae

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Date of birth : June 9th 1948
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EDUCATION

- 1966** **Baccalauréat (Sciences Expérimentales)**
Lycée Gérard de Nerval, 02200, Soissons, France
- 1971** **B.Sc. Honours Degree (Chemical Physics) - Class II**
University of Manchester, Institute of Science and Technology, Manchester England
- 1985** **B.A. Honours Degree (Mathematics) - Class I**
Open University, Milton Keynes, England

Additional training:

Sponsored by VG Isotech Ltd:

- 1989** **Management Course:** Two days per month for a whole year.
- 1990** **Marketing Course:** Two weeks of intensive training by the 'Chartered Institute of Marketing'.
- 1989-93** **Company Organisation and Development:** Two days every six months over 4 years.

Software:

- Daily use of: **Microsoft Word, Excel, Access and Power Point.**
- Design of user interfaces for the control of various scientific equipment, data processing and reporting of results.

Languages:

Bilingual: French/English

EXPERIENCE

Marketing:

- Market research.
- Elaboration of product development strategies.
- Detailed definition of technical specifications for products to be developed.
- Quantification of costs and margins in relation to market capacity and demand.
- Evaluation of competition.
- Scientific publications, oral presentations at scientific meetings.
- Organisation and attendance at exhibitions.
- Support to and training of worldwide sales forces.
- Production of technical manuals and commercial literature (in French and English).
- Support to "After Sales Service".
- Management and coordination of external collaborations.
- Management and coordination for the development of applications as a means to extend utilisation of products into further markets.

Technical

- Feasibility studies.
- Full development of technologies to prototype stage.
- Design of software interfaces (PC's and keypads) for the control of instruments.
- Supervision of the implementation of technical specifications (internal and external mechanical, software and electronics resources).
- Preparation of patent applications.
- Preparation of test protocols.
- Test and Installation of instruments.
- "After Sales" technical support and troubleshooting.
- Remote troubleshooting and advice to operators by Modem.
- Training of test and installation engineers.
- Training of customers.

Production

- Supervision of the production of instruments.
- Control of production costs.
- Definition of Quality Control criteria.
- Training and supervision of subcontractors.
- Reliability evaluations.
- Production protocols under "clean room" conditions.

EMPLOYMENT HISTORY

| Period | Position & Company | Technical domains | Experience and achievements |
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| 2000 - | Part-time position EuroVector SpA Milan Italy | Elemental Analysis High temp furnaces Autosamplers for solids and liquids Keypads, TCD's Oxidation and Reduction materials. | To complement a number of activities in Marketing, and R&D. Completion of: Design of software Interfaces for the control of instruments. Production of all technical manuals, commercial literature, and patent applications. |
| 1995-99 | Product Manager Analytical Precision Ltd Northwich Cheshire England | Isotope Ratio Mass Spectrometry Ion Optics Vacuum Technology Modems Sample preparation systems (physical and chemical conversions of samples to simple gases) | Marketing responsibilities + active role in R&D I was recruited to manage the introduction of a new product line for the company: a routine and low cost instrument for the analysis of non-radioactive isotopes in simple gases. The biomedical market was targeted for this new diagnostic tool. Product Commercialisation in Sept 96. In December 1996, I re-located in France to work in collaboration with existing laboratories. The objectives were to develop further applications and extend the use of non-radioactive isotopes into further markets. In Oct 99, the company ceased to trade. |
| 1988-95 | Product Manager VG Isotech (Fisons) Middlewich England | Isotope Ratio Mass Spectrometry | Marketing responsibilities + very active roles in R&D and Production Introduction of a New Product line Turnover in 1988 :Nil in 1993: M£1.9 |
| 1986-88 | Product Engineer VG Isogas (later VG Isotech) Middlewich Cheshire England | Ion Optics Vacuum Technology Gas Chromatography Cryogenic equipment. | Full responsibility for the development and production of an interface between a Gas Chromatograph and an Isotope Ratio Mass Spectrometer. Commercialisation in 88 of a new instrument (Isochrom) + introduction of a new product line. In 89 in Chicago the Isochrom won the "R&D 100" award as one of the top 100 innovations for the year. |
| 1983-86 | Research Associate Alder Hey Children's Hospital Liverpool England Project financed by BOC Health Care, Madison, Wisconsin, USA. | Quadrupole MS Catheters, semi permeable membranes biocompatible materials miniature coil winders clean room facilities miniature valves technology. | Development of a technology for the in-vivo monitoring of blood gases. Elaboration for production protocol under "clean room" conditions. Development of micro tools, for production of the probe. I obtained one patent as the sole inventor for a micro valve of inner volumes in the nanolitres. |
| 1981-83 | Development Engineer BOC Health Care Keighley England | Quadrupole MS IR and UV absorption Opto-acoustics, Photoelectric effects NMR, Dielectric properties of materials in alternating fields. | Development of a technology for the in-vivo monitoring of anaesthetic vapours. Development of a micro-analyser for the in-vivo monitoring of Halothane. Product Commercialisation in 1983. |
| 1979-81 | Post Graduate Research in Nuclear Physics Bradford University England. | Nuclear Spectroscopy Particle Accelerators | Two nuclear reactions were studied by nuclear spectroscopy, which led to the discovery of new nuclear levels. |

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| 1975-80 | Lecturer: Physics & Maths Percival Whitley College of Higher Education Halifax England | Mechanics, Optics Electrostatics & Electromagnetism Electricity, Acoustics Thermodynamics. Pure Maths, Applied Maths, Statistics | Levels taught: "A" Level, "O" Level, ONC, TEC. Tutoring of final year students. |
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ORAL PRESENTATIONS AND POSTERS

- April 1980** *A study of the $^{26}\text{Mg}(t,\alpha)^{25}\text{Na}$ reaction at $E_t=15\text{ MeV}$*
E.J. Jumeau. Annual Conference in Nuclear Physics; Manchester, England
- April 1981** *A study of the $^{10}\text{B}(^7\text{Li},p)^{16}\text{N}$ reaction at $E_t=28\text{ MeV}$*
E.J. Jumeau. Annual Conference in Nuclear Physics; Oxford, England
- Sept 1987** *Advances in GC-IRMS measurements*
E.J. Jumeau, with R. Guilluy, J-P. Riou and C. Pachiaudi. Second German-French Colloquium "Advances in research and use of stable isotopes"; Maria Laach, Germany
- Sept 1987** *Analysis of $^{13}\text{C}/^{12}\text{C}$ ratio of nanomole bio-organic sample with on-line GC-IRMS*
E.J. Jumeau, with R. Guilluy, J-P. Riou and C. Pachiaudi. First International Symposium on Applied Mass Spectrometry in the Health Sciences; Barcelona, Spain
- May 1988** *Experiences in the application of GC-IRMS over a range of sample types*
E.J. Jumeau, with P.A. Freedman. Third German-French Colloquium "Advances in research and use of stable isotopes"; Maria Laach, Germany.
- June 1988** *New Applications in GC-IRMS*
E.J. Jumeau. 36th ASMS Conference on Mass Spectrometry; San Francisco, USA
- Sept 1988** *Determination du $\delta^{13}\text{C}$ de la Frambinone*
E.J. Jumeau, with C. Schippa and G. George. 3^{ème} Congrès Nationale de la Société Française de Chimie; Nice, France
- Oct 1988** *In-vivo evaluation of a micro intravascular blood gas probe*
E.J. Jumeau, with B. Goodwin and R. Chilcoat. American Society of Anaesthesiologists; San Francisco, USA
- Oct 1988** *A micro intravascular probe for blood gas sampling*
E.J. Jumeau, with B. Goodwin and R. Chilcoat. American Society of Anaesthesiologists; San Francisco, USA
- May 1989** *Continuous Flow Dual Inlet as an improvement for IRMS and ^{13}C analysis of breath samples*
E.J. Jumeau, with R. Guilluy. Stable Isotopes in Paediatric, Nutritional and Metabolic Research; Gronigen, Netherlands
- May 1989** *Gas Chromatography Column Switching and dual inlet dynamic interface as a new improvement for IRMS and ^{13}C isotopic analysis of breath samples.*
E.J. Jumeau, with R. Guilluy, J.L. Brazier, J-P. Riou and C. Pachiaudi. Stable Isotopes in Pediatric, Nutritional and Metabolic Research; Groningen, Netherlands
- August 1989** *Gas Chromatography Column Switching and dual inlet dynamic interface as a new improvement for IRMS and ^{13}C isotopic analysis of breath samples.*
E.J. Jumeau, with R. Guilluy, J.L. Brazier, J-P. Riou and C. Pachiaudi. 2nd International Symposium on Mass Spectrometry in the Health Sciences; San Francisco, USA
- Oct 1989** *Le point sur la spectrométrie de masse*
E.J. Jumeau. Isotopes stables et spectrométrie de masse dans les explorations métaboliques et pharmacologiques; Lyon, France
- Oct 1989** *Problèmes spécifiques liés aux échantillons gazeux*
E.J. Jumeau. Isotopes stables et spectrométrie de masse dans les explorations métaboliques et pharmacologiques; Lyon, France
- April 1990** *Misuse of Testosterone in sport: an approach to detection by measurement of isotopic abundance using GC-IRMS (Poster)*
E.J. Jumeau, with G. Southan, A. Mallet and S. Craig. 2nd International Symposium on Applied Mass Spectrometry in the Health Sciences; Barcelona, Spain

- June 1990** *First Study of geographic origin of Heroin and related drugs by GC-IRMS*
E.J. Jumeau with R. Guilluy, J-L. Brazier, M. Desage and H. Chandron. Diskussionstag der Arbeitsgemeinschaft Massenspektrometrie; Konstanz, Germany
- June 1990** *A Review of new applications by the technique of IRMS*
E.J. Jumeau, with C. S. Fenwick and S. Craig. Diskussionstag der Arbeitsgemeinschaft Massenspektrometrie; Konstanz, Germany
- June 1990** *On-Line Measurements of Hydrogen, Carbon, Nitrogen and Oxygen isotope ratios in the range of natural abundance by GC-IRMS.*
E. J. Jumeau, with R. Medina, K. Kempe, and H L. Schmidt. Diskussionstag der Arbeitsgemeinschaft Massenspektrometrie; Konstanz, Germany
- April 1992** *The analysis of C₁-C₅ components in natural gas samples*
E.J. Jumeau, with S. Baylis and K. Hall. 203rd American Chemical Society National Meeting; San Francisco, USA
- April 1992** *The technical design considerations for a continuous flow GC-IRMS system*
E.J. Jumeau, with K. Hall. 203rd American Chemical Society National Meeting; San Francisco, USA
- April 1992** *On-line measurement of HD/D₂ ratios by GC-IRMS*
E.J. Jumeau, with C.S.Fenwick and K. Kempe. 203rd American Chemical Society National Meeting; San Francisco, USA
- May 1992** *The use of isotope ratio mass spectrometry for the clinical diagnosis of metabolic disorders*
E.J. Jumeau. Klinische Anwendungen in der Magnetischen Kernresonanz spektroskope und der Massenspektrometrie; Bochum, Germany
- Sept 1992** *A new technique for the isotopic analysis of micro quantities of gaseous samples*
E.J. Jumeau. Arbeitsgemeinschaft Stabile Isotope; Bayreuth, Germany
- Jan 1993** *Le couplage CG/SM isotopique: principes, contraintes d'utilisation et limites d'application*
E.J. Jumeau. Groupe de Travail Spectrométrie de Masse; Elf Aquitaine, CSTJF; Pau, France
- Sept 1993** *The Isochrom μ G: Survey of applications in the medical and pharmaceutical fields*
E.J. Jumeau. Medical Seminar; London zoological society; London, England
- Sept 1993** *Features and benefits of the Isochrom μ G in medical applications*
E.J. Jumeau. Press Conference; London, England

PUBLICATIONS

- 1988** *Design and application of a new instrument for GC-IRMS*
E.J. Jumeau, with P. A. Freedman. American Laboratory. June 1988, (114-119)
- 1990** *Carbon isotope composition of individual amino acids in the Murchinson meteorite*
E.J. Jumeau, with M.H. Engel, S.A. Macko and J.A. Silfer. Nature, vol. 348, 1st November 1990 (47-49)
- 1990** *Stable carbon isotope ratio analysis on single components in crude oils by direct GC-IRMS*
E.J. Jumeau, with M. Boroy and K. Hall. Trends in Analytical Chemistry, vol. 9 –1990, (331-337)
- 1991** *Stable carbon isotope analysis of amino acid enantiomers by conventional IRMS and combined GC/IRMS*
E.J. Jumeau, with J.A. Silfer, M.H. Engel and S.A. Macko. Analytical Chemistry –1991, Vol 63 (370-374)
- 1991** *¹³C/¹²C determinations made easy with GC-C-IRMS*
E.J. Jumeau. Laboratory Equipment Digest -May 1991
- 1991** *Gas Chromatography with MS or IRMS in studying the geographical origin of Heroin*
E.J. Jumeau, with M. Desage. Analytica Chimica Acta, 247, 1991, (249-254)
- 1991** *Determination of $\delta^{13}\text{C}$ values of sedimentary straight chain and cyclic alcohols by GC-IRMS*
E.J. Jumeau, with D.M. Jones, J.F. Carter, and G. Eglinton . Biological Mass Spectrometry, 1991, vol. 20 (641-646)
- 1991** *Stable Carbon Isotope analysis of amino acid enantiomers*
E.J. Jumeau, with J.A. Silfer, M.H. Engel et S.A. Macko. Analytical Chemistry, vol 63, (370-374)
- 1992** *On-line purification and ¹³C isotopic analysis of CO₂ in breath*
E.J. Jumeau, with R. Guilluy and J-L. Brazier. Analytica Chimica Acta ,1992, (193-202)

PATENTS

- Aug 1987** **Capillary Switching Valve**
European Patent N° 0232581
- Sept 1987** **Method and apparatus for the determination of isotopic composition**
British Patent N° GB 8720586
European Patent N° EP/0306332/A2
United States N° 4866270
- Nov 1987** **Valve arrangement**
United State Patent N° 4706700
- May 1988** **Method and apparatus for the determination of isotopic composition**
British Patent N° GB 8811379
European Patent N° EP/0306333/A2
United States N° 4916313
- Feb 1997** **Preparation of gaseous mixtures for Isotopic Analysis**
British Patent N° 9604037.3
International Patent N° PCT/GB97/005030
- June 1997** **A Method of Injecting a Gas into a Mass Spectrometer and Apparatus therefor.**
British Patent N° 9611820.3
International Patent N° PCT/GB97/01541

REFERENCES

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| <p>Dr Giorgio Sisti <i>Managing Director</i> EuroVector SpA Via Tortona, 5 20144 Milano Italy Tel : 0039 028 394 736 Fax : 0039 028 94 29 203</p> |
| <p>Mr Mike Bolshaw <i>Development Manager</i> <i>Ex Analytical Precision Ltd</i> 108, Bond Street Macclesfield Cheshire SK11 6 QR England Tel : 0044 1625 615 114</p> |
| <p>Mr Keith Hall <i>Managing Director</i> GC2 Chromatography Ltd Millbrook Business Centre Floats Road Manchester M23 9YJ England Tel : 0044 161 286 7889 Fax : 0044 161 286 7557</p> |
| <p>Dr Aygen <i>Managing Director</i> INFAL GmbH Universitätsstr. 142 44799 Bochum Germany Tel : 0049 234 97 11 30 Fax : 0049 234 97 11 325</p> |
| <p>Mr Yannick Poirier <i>R & D Manager</i> Elf Exploration Production CSTJF Bâtiment L21 047 Avenue Larribau 64018 Pau France Tel : 05 59 83 49 04 Fax : 05 59 83 45 66</p> |
| <p>Dr Herbert Tembusch <i>Managing Director</i> Isomed GmbH Birkenweg 10 65510 Idstein Germany Tel : 0049 6126 988 728 Fax : 0049 6126 988 729</p> |
| <p>Dr Brian Goodwin <i>R & D Director (retired)</i> <i>Ex BOC Ltd</i> PO Box 32 Ferndale Pennsylvania 18921 USA Tel : 001 610 847 5949</p> |

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| <p>Dr Malvyn Bjørøy <i>Managing Director</i> Geolab Nor P.O. Box 5740 Fossegrenda N-7002 Trondheim Norway Tel : 00 47 73 96 40 00 Fax : 00 47 73 96 59 74</p> |
| <p>Dr Bernard Eastwell <i>Founder and Ex Managing Director for the VG group of companies</i> 29, Green Ridge West Dene Brighton East Sussex BN1 5LT England Tel : 0044 1273 882 169 Fax : 0044 1273 562 407</p> |
| <p>Prof. Marc Javoy <i>Professor</i> Laboratoire des fluides géologiques Tour 54-1^{er} étage Université Paris VII 2, Place Jussieu 75252 Paris cedex 05 France Tel : 01 44 27 60 91 Fax : 01 44 27 28 30</p> |
| <p>Prof. André Mariotti <i>Professor</i> Laboratoire de Biogéochimie Isotopique Université P. & M. Curie Case Courrier 120 4, Place Jussieu, Tour 26 75252 Paris cedex 05 France Tel : 01 44 27 51 79 Fax : 01 44 27 41 64</p> |
| <p>Mr Gary Parks <i>Managing Director</i> Saygrove Ltd Brookhill way Catheralls Industrial Estate Flintshire CH7 8PS England Tel : 0044 1244 550 022 Fax: 0044 1244 549 843</p> |
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